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Tamil Nadu and Growth Indicators

A widely held view in Tamil Nadu is that its place in any system of intra or inter state comparison and competition is safe and assured. Thus it is pointed out that Tamil Nadu is the most industrialised state, the most advanced in rural electrification (except for the new comer Haryana), the most developed in irrigation and water development, the pace setter in high density plastics for packing, the most successful in family planning at least on the basis of the number of sterilizations, the most farsighted in rural and urban housing programmes, through the State Housing Board and the Slum Clearance Board, and highly developed in its primary schooling and rate of rural literacy. But that all is not so assured in the development posture of the state is suggested in a few recently assembled indicators. The Indian Council of Social Science Research is going to press with a register of students working today for their Ph.Ds. in the Social Sciences. Of the 3,000 students who are currently registered for Ph.D. work and reported by the universities in the country, the three Tamil Nadu Universities report only 7. There are two qualifications to these statistical comparisons. The first is that the figures are out of date almost as soon as they are reported. Ph.D. students are constantly being admitted throughout the year so that statistical reporting at any one point of time becomes out of date at the time of its publication. The other problem is really an imponderable and relates to standards of admission and quality of research. But allowing for all these limitations,

there is certainly need for pushing forward our Social Science teaching and applied research on which the future of Tamil Nadu development depends.

Another pebble in the pond of our complacency is Tamil Nadu's record in the hierarchy of Indian poverty. Already in 1968 in its annual number, the Anatomy of Indian Poverty, Eric De Costa in the section on Patterns of Consumer Outlay which attempted to interpret certain disturbing facts reported in the 18th round of the National Sample Survey, sent up warning signals on Tamil Nadu. The gap between its share in total markets and its population percentage, compared to other states, is widest in the rural area (—1.4), the third widest in the urban area (—1.7) and the second widest when the rural and urban are combined (1.0). In his inter-state picture of the percentage of population living below the line of the destitution, probably because he uses the 1963-64 N.S. Survey and a per capita money yard-stick, (which is also used by Prof : K. K. Pillay in the article which appears in this Number), Tamil Nadu occupies the middle rung among sixteen states. This position of the state is established both from the point of view of the three rings of poverty as well as the absolute line of destitution. However in a recently published monograph in December 1970, Poverty in India, Dandekar and Rath using a diet of 2,250 calories as the Indian minimum, show that Tamil Nadu which has the third highest monthly per capita expenditure as well as the per capita total annual consumption expenditure, has the third largest percentage of rural people living below the minimum caloric level in the rural area (55.19), and the largest percentage of urban population below that level (70.78). In this inter-State comparison, Kerala is left out as presenting special problems both of substance and computation. All this means that the corridors of poverty run right through Tamil Nadu more starkly and more obviously than in that

of 13 of the other 15 states and union territories. To what extent is this reality a monetary factor, a reflex of the relative status of inflation in the state? To what extent is it a reflection of our having the highest rural house-holds without land (25.98)? To what extent is it the consequence of the pattern, efficiency and spread of our investment and the inequalities involved in it? There are here indicated lines of action-oriented research in Tamil Nadu development.

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Our Production Profile

February witnessed some pluses and minuses in the production profile of the state. The pluses are in the leather industry, industrial management and crop prospects. One of our national laboratories which has close links with its companion trade and is in fact deeply involved in its fortunes, is the Central Leather Research Institute. Its indefatigable Director and staff bring to a focus in February of every year the R and D efforts in the leather field through a symposium, a get together and a fashion parade. An Indo-Italian footwear company has now opened in Madhavaram, Madras to produce shoes for export. For 1971 about Rs. 4 crores of export orders are to be executed, providing employment for over 100 skilled workers. The month also saw some improvement in industrial management. Binny's, Ralli's and more recently Larsen and Taubro are moving in the direction of integrating their subsidiaries, replacing the previous semi-autonomous system. Apart from the tax saving incentive, the trend towards such integration should make for improved and economic management and other economies of scale. A further plus is to be found in Tamil Nadu sharing with the rest of the country a record Kharifa and Rabbi harvest. The All-India forecast for the year, of 106 million tonnes, will have for Tamil

Nadu effects on procurement, surplus stocks, credit supply and prices. The urgency for the early functioning of the Tamil Nadu Agricultural Development Corporation is evident. On the minus side is the uncertainty with regard to the production schedule of the Salem Steel Plant. It is good news that a further feasibility study is not to be undertaken. Some speeding up of the steps leading to the operational stage of the plant is needed, both to meet the lagging supply position and mop up some of the technical and engineering unemployment in the state. The other mixed bag is the trend in engineering exports from the South. The short term trend is heartening, registering a 40% increase for the year, 1969-70, compared to a 20% All-India figure. The absolute values are, however, sobering, Rs. 15 crores for South out of 107 crores for All-India. But the long term concern is in the increasing state of duplication, overlapping, growing bureaucracy, and increasingly difficult raw materials position that the nascent industry in the state faces.

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Export Infrastructure

A recent S T D S Baroda study aimed at improving the transport infrastructure of our export trade has recommended a high priority programme of road construction which serves the export routes of the country. It is recommended that 2% of GNP should be invested in this infrastructure. Of the 9 national routes recommended 4 are centred in or moving out of Tamil Nadu, involving a total investment of about Rupees 45 crores. The four high ways and their proposed investments are: Dindigul—Madras 5.73 crores, Salem—Quilon 9.3 crores, Vijayawada—Madras 7.08 crores, Madras—Bombay 21.64 crores. The four fold criteria on which this estimate is based are flexibility, speed, safety and economy of the

roads. If this important infrastructural investment is to be undertaken, it must be through the Central Government discharging its responsibility. While the state's annual expenditure on roads is equal to or more than the revenue collected from road traffic, the centre's expenditure which was around 25% of its revenue from this source, has for the last accounting year, 1968, fallen to 14.1%.

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Health and Education Initiatives in the State

Tamil Nadu has one of the three Cancer Institutes in India, thanks to the vision and patient persistence of the late Dr. Muthulakshmi Reddy and her son Dr. Krishnamoorthy and his devoted collagues. The cancer institute, situated adjacent to the Madras Institute of Development Studies, is only 15 years old, but already in its research and curative treatment has made a development contribution to the State, the country and the world of medicine. It is urgently in need of relocation and thanks to the grant of 5 acres of land by the Chief Minister can now look forward to the development of a modern research and curative institution, provided around Rs. one million a year for the next ten years is available to it in buildings and equipment. Equipment funds are being raised from friendly donors, including Unesco's coupons. February also saw an important education initiative in the State, in the establishment of its first Agricultural University centred in the agricultural institutions in Coimbatore. This initiative represents an important development facility for the further growth of agricultural sciences, their application to the massive dry farming area of the state and the extension of such sciences to its rural people.

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Survey of Economics Research

The Indian Council of Social Science Research (ICSSR) is in the final stages of its survey of social science research during the last two decades in India. At 10 days of seminars early in February in Delhi, a review of economics research surveys indicated an impressive record in both volume and quality in this important area of knowledge. The most advanced and in some senses original work has been initiated in the field of agricultural economics and possibly in macro and monetary economics. The area which needs more concentrated research attention is the whole interdisciplinary complex covered by development. It may well be worth while attempting to chart this area by promoting special development research initiatives, through selected area or regional programmes.

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Bangalore Seminar

A seminar on the role and functions of the Indian Council of Social Science Research was organised in Bangalore University for social scientists from the universities of Andhra Pradesh and Mysore State on February 15th and 16th. A similar seminar had been organised for those from Kerala and Madurai universities on February 5th and 6th in Trivandrum. The discussions and conclusions of the two Seminars were similar to those of the Madras Seminar reported in the last issue of the bulletin--with emphasis on the need to improve the teaching of social sciences, to regionalise the council's activities, to orient research in line with the wishes of the consumers, to maintain and promote high quality standards, to provide training in methodological research problems at the pre Ph.D level.

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A Summer Workshop on Research Methodology in Economics

As stated above, the ICSSR Seminars in Madras and Bangalore on January 29-30 and February 15-16 recommended and endorsed the organisation of training courses in research methodology. Accordingly the Madras Institute of Development Studies proposes, with the help of the ICSSR, to organise a summer workshop on Research methodology in Economics. The details of the workshop are:

Object: (a) To discuss, review and clarify the methodological problems and approaches with regard to Ph.D level research in Economics in the Universities of the South Indian States (b) To develop a guide to Research methodology in Economics, which may include outlines or model of courses at pre Ph.D level.

Dates: From Monday the 3rd May 1971 to Saturday 12th June, 1971.

Place: Madras Christian College, Tambaram, Madras-59, which will provide workshop facilities and residence for participants.

Membership: (a) Participants: 25 Ph.D. students and 10 staff supervisors from the Universities of Venkateswara, Osmania, Karnatak, Kerala, Bangalore, Andhra, Madras, Mysore, Annamalai and Madurai, will participate in the workshop. The heads of the Economics departments of these 10 Universities are being requested to select the student and staff participants in the Institute. The students should be outstanding among those registered for Ph.D. or those who are about to register for Ph.D.

(b) Staff: The Director of the workshop will be Dr. C. T. Kurien, Professor of Economics, Madras Christian College, Tambaram. There will be four staff members invited from among Economics pro-

fessors in the country who will act as resident resource personnel.

Programme: (a) During the first week, 3rd to 8th May 1971 the members will establish the major methodological problems in economics research, which they face as staff and students. On the basis of this review, its personnel resources, available library and field work facilities, the workshop will establish a detailed programme of lectures, discussion and research work. The student participants are invited to bring with them, their Ph.D thesis or their research designs for detailed discussion and consultation. The workshop may also function in sub-groups dealing with special problems faced by staff supervisors or Ph.D students in their final stage of report compilation or those in the process registering their subject field.

(b) Ten basic papers are being written for members of the workshop by Economists from all over the country on (i) What is Economics Research? (ii) Identification of the Research problem (iii) Processes of conceptualisation (iv) Research design and Typology (v) Methodology of surveys and sampling techniques (iv) Historical method (vii) Annotated Survey of source material of data and their interpretation (viii) Model building, systems analysis and critical paths (ix) Use of National Sample Surveys, Census and case study (x) Target setting, forecasting and predicting.

(c) The proceedings of the workshop will provide material for a publication which may be used for pre Ph.D programmes and/or for alternative or model courses.

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The February Seminar was led by Mr. K. K. Pillay whose paper "Population Problems and Family Planning in India" forms the main article of this issue of the bulletin.

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POPULATION PROBLEMS AND FAMILY PLANNING IN INDIA

BY

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Introduction:

India has several pressing problems. Of all these, one of the most urgent, as Prof: Ginsberg points out in the last issue of the bulletin, is that of its multiplying population. The population issue is also a global challenge.

Robert Mcnamara, President of the World Bank, aptly portrays the issues. The population problem is "by half a dozen criteria, the most delicate and difficult issue of our era — perhaps of any era in history. It is overlaid with emotion. It is controversial. It is subtle. Above all, it is immeasurably complex. It is the tangled problem of excessive population growth. It is not merely a problem, it is a paradox. It is one and at the same time an issue that is intimately private — and yet inescapably public. It is an issue characterised by reticence and circumspection — and yet in desperate need of realism and candour. It is an issue intolerant of government pressure — and yet endangered by government procrastination. It is an issue, finally, that is so hypersensitive — giving rise to such diverse opinion— that there is an understandable tendency simply to avoid argument, turn one's

attention to less complicated matters, and hope that the problem will somehow disappear. But the problem will not disappear. What may disappear is the opportunity to find a solution that is rational and humane. If we wait too long, that option will be overtaken by events. We cannot afford that. For if there is anything certain about the population explosion, it is that if it is not dealt with reasonably, it will in fact explode: explode in suffering, explode in violence, explode in inhumanity" 2.

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Population Growth in India

Till 17th Century, the population of India did not change materially. Between 1600 and 1750 there was a slow increase. At the time of the first census of India (1871) the population was about 214 million. During 1871 — 1921, famine and plague took a heavy toll of human life. After 1921, population growth has been rapid and uninterrupted and hence 1921 is considered as the 'Great Divide'. During 1891 — 1921, in 30 years, the population increased only by 15 million. During the next thirty years, 1921-51 the population increased not by another 15 million, but by 110 million. And during a single decade i.e., 1951 — 1961, the population increased by 78.1 million. In 1970 our population is estimated to be around 554 million, increasing annually by about 13 million.

The Population Reference Bureau, has concluded that India's Population has passed the 555 million mark and if the present growth rates are maintained, it will total 1000 million by 1990 or 1995. The study described India's demographic future as "bleak". Predicting a bleak outlook, the study found that 1000 million persons in India would mean a population density 14 times greater than that of the United States today. It also pointed out that India had a population of

which 45 per cent was under 15 years of age. Consequently many fertile years lay ahead. Hence the population of India could reach the staggering level of 1500 million at the end of the century if mortality rates continue their moderate downward trend. The life expectancy in India is assumed to increase by 19 years between 1965 and the year 2000, increasing the age for males from 49 to 68 and for females from 48 to 67.3. According to the latest United Nations Demographic Year Book, the population of India and China would be equal by 1999, if the present growth rates continue. (1.4 per cent for China and 2.5 per cent per annum for India).

The trend in birth and death rates in India during the last 50 years is shown in the following table:—

ESTIMATED TREND IN BIRTH AND DEATH RATES AND ANNUAL GROWTH RATE OF INDIA : 1921-1931 to 1961-1971.

Year	Brirth Rate.	Death Rate.	Annual Growth Rate.
1921-1931	46.4	36.3	1.01
1931-1941	45.2	31.2	1.40
1941-1951	39.9	27.4	1 25
1951-1961	41.7	22.8	1.89
1961-1971	39.8	15.6	2.42

Source : Pitambar Pant's paper on 'Population, Economic Development and Food (1970), Page 5.

India Compared with Developed and Developing Regions

During the 50 years 1920-1970, world population has increased about 93 per cent. The population of the more developed regions has increased by 60 per cent and of the developing regions by 111 per cent. India's population during the same period increased by 120 per cent, from 251 million in 1920 to 554 million in 1970. The annual rate of growth of India's population during the decade 1920-1930 was 1.06 and

during the next two decades 1.35 and 1.24 respectively. There was sharp acceleration to 1.97 in the next decade 1950-1960 and further to 2.35 in the decade 1960-1970.

POPULATION GROWTH IN INDIA AND DEVELOPED AND DEVELOPING COUNTRIES AND WORLD 1920-1970.

Year.	World Total.	More Developed Regions.	Developing Regions.	India.
	Population in Millions.			
1920	1861	674	1187	251
1930	2070	759	1311	279
1940	2296	822	1474	319
1950	2516	858	1658	361
1960	2998	976	2022	439
1970	3592	1082	2510	554
	Annual Average increase.			
1920/30	1.07	1.19	1.00	1.06
1930/40	1.04	0.80	1.18	1.35
1940/50	0.92	0.43	1.18	1.35
1950/60	1.77	1.30	2.00	1.97
1960/70	1.82	1.04	2.19	2.35

Source : Pitambar Pant's paper on 'Population, Economic Development and Food (1970), Page 4.

The growth rate is not uniform. In the more advanced countries the increase is relatively low, 0.4 to 1.2 per cent per year, while in the developing countries it reaches its peak. In many of the countries of Latin America it is now 3.0 to 3.6 per cent and in some Asian and African countries it exceeds 3.0 per cent per year. In many of the poorest countries, it is 2.5 per cent or above, while the lower rates occur in rich countries 4. Hence the burden of population growth falls where it can least be accommodated. And the politically dangerous differentials between the have and the have not nations are thus sharpened by the most basic of life processes. It is no exaggeration to say that in the

most fundamental terms, there are two kinds of countries in the current world: those with a high standard of living and low fertility and those with a low standard of living and high fertility. In the first category (developed countries) one third of the world's population lives and in the second category (developing or underdeveloped countries) lives two third of world's population 5.

India's main problem is that while the death rate has been going down steadily, the birth rate is more or less static. In 1961, when the draft of the Third Five Year Plan was ready, Pandit Nehru was asked by a newspaper correspondent at a press conference; "What in your judgment, do you consider your biggest achievement during the last two Five Year Plans?" Nehru paused for a minute and replied "I think our biggest achievement during the last two Five Year Plans, is in reducing the mortality rate. For every year of independence in India, we have added one year to the average expectancy of life of an Indian." Dr. S. Chandrashekar, till recently the Minister of Health and Family Planning, Government of India, points out that this welcome and encouraging decline in infant, maternal and the over-all general death rate has unfortunately not been matched by a definitive decline in the nation's birth rate.

India has a large proportion of the population in the younger reproductive age of 15 to 25. Over 5 million girls join the reproductive age group every year. At that young age nearly two thirds of them attain marital status.

The following table gives a comparison of the median age at marriage of Indian boys and girls with that of some other developing countries.

MEDIAN AGE AT MARRIAGE OF BOYS AND GIRLS OF INDIA AND SOME OTHER DEVELOPING COUNTRIES

Name of the Country.		Median age at Marriage. Boys.	Girls.
1. Ceylon	..	26.1	20.1
2. Malaya	..	23.9	18.2
3. Thailand	..	23.7	20.4
4. Egypt	..	25.2	19.4
5. Turkey	..	23.3	19.5
6. Tunisia	..	26.2	19.8
7. Singapore	..	25.8	21.1
8. Philippines	..	24.1	21.0
9. India	..	20.0	15.0

Source : Facts about Population and Family Planning in India, November 1967, Page 6.

Data on the proportion of married females in each age group by rural and urban areas throw light on early marriages in India.

PROPORTION OF MARRIED FEMALES IN EACH AGE GROUP BY RURAL AND URBAN

Age Group.		Rural.	Urban.	Total.
10-14	..	0.221	0.068	0.193
15-19	..	0.730	0.517	0.696
20-24	..	0.932	0.856	0.919
25-29	..	0.945	0.929	0.943
30-34	..	0.915	0.912	0.915
35-39	..	0.870	0.872	0.871
40-44	..	0.778	0.772	0.777

Source : Pitambar Pant. "Population, Economic Development and Food". April 25-29, 1970, Page 6.

Population Growth, Development and Well-being.

The unprecedented population growth in India takes on its full meaning when we relate it to the resources available for satisfying the basic needs of the people

and their cultural aspirations that is when we try to understand the relationship between population growth, development and well-being. The imbalance between them creates the problem of the population explosion.

Since independence, India has been striving hard to improve the lot of the undernourished, underfed, under-clothed and under-sheltered masses and also to provide better employment opportunities, transportation, and other amenities which are now considered basic to civilization. This is being done through a series of Five Year Plans. Striking advances have been made in economic and social fields. Agricultural production had doubled. We are on the threshold of a Green Revolution. There is an all round development in educational, medical and industrial fields. The national income has risen by 90 per cent over a period of 18 years. But our gigantic efforts and impressive gains have not made any improvement in the conditions of the masses. "The gains of development have been seriously eroded, however, by the rising tide of population. The income per-capita which stood at 10½ annas per day at the commencement of planning, has registered a meagre rise of about 3 annas at the constant value of the rupee in 1948-49. At the current value of the rupee the income per capita is estimated at about a rupee and a half. Assuming that we will be blessed with 100 per cent success of the Fourth Plan, all that we can hope for is an addition of a quarter rupee per day over a five-year period" 6. India s per capita income of 11 U.S. cents is about the lowest among some 120 countries of the world. The unprecedented population growth tends seriously to retard the growth in per capita income. In the words of Dr. Ganguli, the impressive increases of our Five Year Plans have a *tragic aspect*. "What appears as an impressive rate of advance along a statistical curve turns out to be a Zero rate of improvement for the vast masses of our millions."

The World Bank in an year-end review (1970) of its activities in India says that despite India's broadly favourable current economic scene, there are a number of difficulties in the way of sustaining the rate of economic growth at a tolerable pace in the long run. First among those it lists is the population problem. In line witn the comment of the Pearson Report that no other phenomenon casts a darker shadow over the prospects for international development than the staggering growth of population, Pitambar Pant states: "The speed with which a country develops depends largely upon its ability to direct a sizable part of its growing resources to savings and investment rather than to current consumption. It is difficult for a poor country to have a high savings rate. If it can set aside 8 — 10 per cent of its income for investment in early stages of its development, it is already doing not too badly. At this rate, if its population is growing at 2.5 per cent per year it will probably be investing *just about enough purely to stay where it is*. What is more likely to happen is that the rate of investment might be further reduced as a growing population, with a high proportion of dependent children, might find it increasingly difficult to spare as much income from consumption under pressure of meeting the larger demand for housing, education, health, sanitation and water etc. facilities arising out of the larger population. Population growth does not only tend to reduce the flow of investment funds. It also means that resources available for building economic infrastructure are insufficient and that capital invested in industry and agriculture is spread increasingly thinly over the larger labour force. As a result productivity suffers and living standards cannot be raised rapidly. The larger consumption needs of the people may also reduce availabilities for exports creating thereby additional difficulties for balance of payments. In the case of essential supplies, such as food grains, where the

scope for raising domestic production beyond a certain level (given the limitation of land and water) may be restricted, excessive population could create serious problems as any effort to bridge the gap between supply and demand through imports for a country as populous as India may impose unmanageable burden on the balance of payments. On the other hand if the gap remains unfilled, there will be considerable pressure on prices of food grains which in turn may lead to inflationary rise of prices all around, and ultimately seriously impede the continued growth of the economy" 8.

It is estimated that to raise the national income by one dollar, two dollars of investment are required. Thus with a 1 per cent population growth rate, a 3 per cent increase in the national income will be needed merely to maintain the same per capita income. With a 2 per cent population growth rate, a 6 per cent increase in national income will be needed before any lasting rise in per capita income could be expected. Most countries developed and developing are presently maintaining a 3 to 5 per cent increase in national income, which means that the people of the wealthier ones, with a population growth rate 1 per cent or less, are becoming richer, whereas those of the poor countries with a population growth of 2 per cent or more, are becoming progressively poorer 9. India with a 2.5 per cent population growth rate and 3.5 per cent increase in national income, is striving every nerve to maintain a mere survival level. Dr. Malcolm S. Adiseshiah, in his inaugural address to the Seminar on 'The Role, Functions, Programmes and Organization of the I.C.S.S.R.' organised by the University of Madras—January 29th, 1971, dealt with the relationship between our development goals and our meagre attainment in relation to those goals and referred to the gap as *Yawning Gap* between our development goals and our actual achievements 10.

The progress of a country is affected by the size, distribution and quality of its population. In a democracy every citizen must be provided with not only adequate food, but also shelter, clothing, education, employment, medical care and other amenities of life. It is not difficult to see how the problem of providing these amenities increases in complexity as the size of the population increases. A population with a large per cent of dependent children and old people has to spend a large proportion of earnings, in supporting them. The burden of dependency affects the saving capacity of a nation and the dependency rate is often used as in index of development itself; the smaller the dependency rate, the greater the development achieved and possible to be achieved. Similarly in tradition-oriented underdeveloped countries, women are not usually engaged in skilled labour and that results in a wastage of talents and adds to dependency. Other distributional aspects, geographical, rural-urban, social classes etc. affect the development and progress of a country. The quality of population is the other factor. A physically fit population is capable of contributing more to productivity than a population which is undernourished, underclothed and underhoused. Every one has a right as the citizen of democracy to satisfy his physical, mental, emotional, spiritual and socio-cultural needs and to lead a purposeful and meaningful life.

Turning to food production, it rose from 55 million tonnes in 1951 to 72 million tonnes in 1965-66 and 94.0 million tonnes in 1968-69, but the per capita consumption of food grains decreased from 467 grams per day in 1960-61, to 438 grams per day in 1968-69. Drought conditions prevailed during 1965 and 1966. In 1967-68, the "Green Revolution" raised the food production to nearly 95 million tonnes, but importing food grains continues. Even though the new miracle strains can raise food production to new high levels, there are many obstacles to achieving the

maximum yields. The new seeds which enhance the food supply, require greatly increased amounts of fertilizer to produce their high yields. It is estimated that we will need 10 new fertilizer plants annually to stay even with the needs of its growing population. More irrigational facilities, insecticides, rodenticides to produce and protect the high yielding varieties, are needed 8. A change in the traditional methods of agriculture is also needed. Another reason for caution in basing long range predictions on the recent improvements, is the element of weather. Some years will surely be less favourable. If droughts or floods occur in successive years, the country will be on the brink of mass famine. Pitambar Pant points out that the doubling of foodgrains production, three fold increase in oil seeds and even more in milk, and 2½ times expansion in production of sugar cane and cotton to be achieved in the course of the 17 years, 1968-69 to 1985-86, are on the face of it, formidable tasks. Even if production potential is assumed to improve, excessive growth of population comes in the way of improving the content and quality of food available for consumption. Instead of the production potential being utilised for producing more nourishing food for a smaller population, it will have to be used mostly to supply the calorie requirements of the essential diet of a large population at the cost of nutritional standards 11.

"The human body has shown to be composed of the following basic constituents: It contains about

17 per cent protein,
13 per cent fat,
1 per cent carbohydrates,
62 per cent water and
7 per cent minerals.

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Of these constituents only fat and water may vary to any degree: the result of even a slight reduction in the quantities of the remaining three in the body could be dramatic or even fatal" 13. In India, many do not have enough to eat. Many others who are able to satisfy hunger, with diets based almost wholly on cereals, remain deficient in essential nutrients—protein, vitamins and minerals. With increasing food grain supplies, this number is likely to increase, particularly in the most vulnerable 1-5 age group and among pregnant and nursing mothers. There is a severe shortage in such protective foods as milk, meat, fish, eggs, fruits, fats etc.

The recent study of the Indian Institute of Public opinion, extending over four important elements of nutrition, calories, proteins, iron and Vitamin A—yields some startling results. A deeply discouraging implication of the study is that health-wise, the Indian nation over time has been becoming weaker in spite of the fact that it enjoys at present a longer expectancy of life than it did at the time of independence. Almost the entire population, except perhaps the very rich, remain short of essential nutrient, Vitamin A, available largely from fruits and vegetables. About one-third of the total population on the monthly expenditure group of less than Rs. 100 is considerably short of all the four essential nutrients, if their current levels of intake of these nutrients is compared with the minimum levels of intake prescribed by the Nutrition Expert Group. Another one-third of the total population having a monthly household expenditure in the level of Rs. 100 — 150, just succeeds in breaking even, when their nutritional intake of protein is compared to the minimum levels prescribed. A marginal shortfall in food availability can push this group also into severe protein shortages. This group already experiences varying degrees of shortages in regard to calories, iron and vitamin A.14. The Indian Institute

of Public Opinion has attempted for the first time, the measurement of the inequalities in the nutritional standards between the states and the four major expenditure groups with monthly household spending levels of Rs. 0 — 100; 101 — 150; 151 — 300 and Rs. 301 and over as observed in 1968-69. State-wise data show considerable disparities in nutritional intake. On the basis of intake of food in 1968-69, Kerala and Orissa are the two weakest states with nutritional standards about half the all-India standard, except for calories in which case intake in Kerala is about two-thirds and in Orissa about three-fourths of the all-India level. The index of calorie intake in the case of Tamil Nadu is observed to be 87.6 with all-India base (100), and the protein intake is 73.0 with all India base (100). Iron intake is 67.4; Vitamin A intake is 78.6. This study points out that since nutritional deficiency particularly protein deficiency, in early childhood has a permanent negative effect on human development, it is feared that the children born in the late sixties may be worse off, healthwise as compared to the children born in early or late fifties 15.

Speaking at the Asian Nutrition Congress held at Hyderabad on January 29th, 1971, C. G. King, of Columbia University, New York, said failure to provide quality protein food and total energy for mothers during gestation and lactation and for their infants and children up to the age of five was clearly one of the greatest causes of sickness and death and retarded development of the world's population. Severe early malnutrition would curtail the growth of brain. Delivering the key note address at the inaugural session in Hyderabad on 29th January, 1971, A. H. Boerman, Director-General of F.A.O. said, "Nutrition is the key to development. If the government wish to see their development plans succeed they must pay closer attention to nutrition than in the past." He also pointed out that policy

makers of today regarded development as primarily a measure of economic growth. That attitude should be revised, since nutrition was more closely related to economic growth. Malnutrition could wreck a country's growth potential in terms of industrial and agricultural production and also intellectual development. Enlightened nutrition policies could, therefore, do a great deal towards directly achieving the social aims of development without massive economic growth. He added that it is rather painful to see that nutrition has not yet attained its full and proper place in policy-making both at the national and international levels. Dr. Malcolm S. Adiseshiah in his inaugural address to the I.C.S.S.R. Seminar, pointed out that malnutrition suffered as a child between the years 1 and 5 and the resulting brain damage can never be repaired—whatever may be the quality of the school he attends.

Millions of children who suffer from malnutrition, do not die at their infancy. They live languidly on—stunted in their bodies, and crippled in their minds. The human brain reaches 90% of its normal structural development in the first four years of life. We now know that during the critical period of growth, the brain is highly vulnerable to nutritional deficiencies: deficiencies that can cause as much as 25 per cent impairment of normal mental ability. Even a deterioration of 10 per cent is sufficient to cause a serious handicap to productive life. This is irreversible brain damage. What is particularly tragic in all of this is that when such mentally deprived children reach adulthood, they are likely to repeat the whole depressing sequence in their own families. They perpetuate mental deficiency, not through genetic inheritance, but simply because as parents they are ill-equipped mentally to understand and hence to avoid the very nutritional deprivations in their own children that they themselves suffered. Thus hunger and malnutrition forge a chain of conditions that only spiral the

total human performance dismally downward. Alertness, vitality, energy, the ability to learn, the desire to succeed, the will to exert an effort—all these inestimable human qualities drain away. The population explosion's corrosive effects on the quality of life do not end with hunger. They range through the whole spectrum of human deprivation. In the developing countries, already caught up in the dilemmas of development, there is a chronic insufficiency of virtually every necessity 16.

The following standard of living indicators is an eyeopener to the Indian position in relation to other countries:

STANDARD OF LIVING INDICATORS—INTERNATIONAL COMPARISONS

Name of the country	Per Capita Annual income in Rs.	Per Capita Daily consumption in grams Cereals	Sugar	Milk	Fat oil	Per Capita Daily intake Calorie	Protein (Grams)	Per Capita Annual Energy
India	543	346	50	110	9	1810	45	176
Australia	13,650	219	144	618	39	3120	92	4,791
Brazil	1,890	304	111	209	16	2860	71	392
Canada	15,653	184	137	646	57	3180	96	8,060
Ceylon	990	370	50	52	10	2180	50	112
France	13,035	235	91	578	65	3150	102	3,093
Germany (W)	11,340	194	91	557	70	2870	80	4,199
Israel	8,685	275	108	371	48	2850	88	2,262
Italy	7,650	360	72	418	48	2860	87	2,129
Japan	6,908	394	50	100	19	2350	78	2,323
Kenya	750	350	29	98	4	2120	64	144
Korea (Rep)	1,050	556	4	5	1	2390	70	567
Mexico	3,585	353	104	339	28	2780	74	1,073
Pakistan	810	453	60	195	16	2290	52	92
Philippines	1,748	342	46	40	8	2000	50	236
Sweden	19,988	176	120	745	61	2900	80	4,787
U.A.R.	1,245	551	49	122	19	2810	80	267
U.K.	11,700	206	136	593	62	3220	89	5,003
U.S.A.	24,773	177	133	665	61	3200	96	9,828

Original amount in dollars as calculated by the Statistical Office of the United Nations has been converted into rupees at the rate of Rs. 7.5 to a dollar.

Source : Statistical outline of India. Tata Economic Consultancy Services, Pp. 135 & 136.

Unemployment

The unemployment backlog in 1951-52 was 3.5 million. By the end of 1965, 31 million additional jobs were created. However, unemployment rose to nearly 10 million because of immediate increase in population and a consequent increase in the labour force. Dr. V. K. R. V. Rao concludes that India must find employment for up to an additional 106.8 million in the period 1951-81 (compared with an estimated total labour force in 1951 of 139.9 million) 17. But this is a conservative estimate.

Gloomy Prospect and the Period of Grace

The achievements of the Five Year Plans are encouraging but they have not begun to catch up with the needs of the rapidly expanding population. The report of Coale and Hoover, gives a warning that continued high fertility will lead India to economic suicide. India according to them has still a period of grace to put her demographic house in order, and this period of grace is no more than a generation. If this short period is not exploited wisely and aggressively, all her achievements through Five Year Plans will remain close to the breadline. So it is imperative for us to reorient our reproductive pattern by bringing down the birth rate to 25 in the next ten years 18.

Family Planning Ends and Means

Family planning or birth control, is not mere birth prevention, but the choice and timing of birth. It recognises child bearing as a personal matter in which personal responsibility may be exercised. Family size should be determined by choice rather than by chance. Birth control which began as a purely preventive programme has now developed a positive side with a remedy to infertility.

I (a) The purpose of family planning is two fold:—
The first purpose is the adjustment of individual families, based on consideration of health of the child and the mother and the welfare of the family and the better care and upbringing of children keeping in view the economic resources of the family. The question is, given the conditions of their living, how many children the parents, as far as they can judge, can reasonably accept and rear providing them the opportunity of living a full and purposeful life.

(b) Secondly, the adjustment of the whole population to their means of subsistence and amenities of life. It means that in the light of existing resources and circumstances, the number should be limited so as to result in the optimum health of society, nation or even the world.

II (a) There are quite a few who from religious, moral or scientific conviction or from political principles do not accept any policy geared to reduce population growth. As short a time ago as 1950, there were acrimonious debates over the religious or moral issues, and as well as the socio-economic ones involved in family planning. Today, such planning is almost universally accepted either tacitly or officially, as one of the sensible approaches to bringing some measure of order into a chaotic society. The earlier opponents agree today to the need for limiting the family size, but they question the means to be employed. Means should be such that they do not violate the true nature and purpose of sex in marriage and family. The means to be used must also be simple, cheap, reliable and harmless and must be psychologically, socially, morally and reli-

giously acceptable to the simple and illiterate masses of people living in our rural areas too. India is in a very happy position, because there is no organized opposition from any religious group against family planning.

(b) A large number prefer to consider family planning as an end in itself, representing the only solution to the "population explosion". For the proponents of this argument, given the present rates of growth, there is no possibility of coping with the imbalance between needs and resources of the earth. They consider family limitation as the immediate objective and should take precedence over development 19.

(c) Finally, there are those who may be considered eclectic with regard to the totality and complex nature of the trend of population and progress in developing countries. For the eclectics there is no antimony between population growth and development. On the contrary, they complement each other. Family planning is one of the means for solving certain health, as well as social problems, in accordance with the population policy independently established by the Government. It becomes evident in this school of thought that population dynamics, both as an essential question and an organised activity, should be set in its appropriate place in the overall framework of man and his endeavours 20.

Family Planning in India

Considering the urgency of the problem, the Government of India has declared Family Planning as the State Policy and became the first Government to recognise family planning as an officially sponsored programme. In the First Five Year Plan, the family planning programme was primarily directed to the

building up of an active public opinion in favour of family planning and the promotion of family planning advice and service on the basis of existing knowledge. At the same time demographic as well as medical and biological studies were encouraged. Assistance in the shape of subsidies and grants was given to states, local authorities and voluntary organizations and scientific institutions for opening family planning clinics and for research schemes relating to biological and demographic problems.

During the Second Plan period, the programme was developed as a four-point research-cum-action programme, namely establishing centres (both static and mobile) where family planning advice and assistance are available free of charge; training doctors, nurses, health visitors, ANMs, social workers and others, who man the family planning organization; educating the people on the benefits of family planning and how it can be practiced; and conducting research on the bio-medical, demographic, sociological and other aspects of the programme.

The 1961 census deepened the gloom of the planners. Subsequent progress is summarised in the following tables:—

PROGRESS OF FAMILY PLANNING

	1960-61	1966-67	1967-68	1968-69 (est)
		000s		
Family Welfare Planning Centres (Including sub-centre).	2.1	19.7	25.7	29.0
Rural	1.4	18.1	23.9	27.2
Urban	0.7	1 6	1 8	1.8
Sterilizations	46	890	1840	1650
I.U.C.D. Insertions	—	920	670	470
Rubber contraceptives.				
Productions (Mi)	—	24	30	N.A.
Imports	17	17	48	105

Source : Statistical Outline of India, 1970. Tata Economic Consultancy Services, P. 105.

PROGRESS OF FAMILY PLANNING (STATE-WISE)

(Cumulative position up to December, 1969)

		I.U.C.D. insertions '000s)	Sterili- zation.	% of eligible couples covered. I.U.C.D.	Sterili- zations.	Total
1.	Andhra Pradesh	141	629	1.5	13 0	14 5
2.	Assam	117	51	4.3	3.3	7.6
3.	Bihar	129	364	1.2	5.4	6.6
4.	Gujarat	164	401	2.5	13.7	16.2
5.	Haryana	202	85	10.9	8.1	19.0
6.	Jammu & Kashmir	35	34	4.5	7.1	11.6
7.	Kerala	181	344	5.7	17.4	23.1
8.	Madhya Pradesh	155	578	2.0	11.9	13.9
9.	Maharashtra	318	1,084	2.4	19.0	21.4
10.	Mysore	235	361	3.5	11 5	15.0
11.	Orissa	119	386	3.3	15.4	18.7
12.	Punjab	367	170	13.2	11.4	24.6
13.	Rajasthan	88	154	1.8	5 0	6.8
14.	Tamil Nadu	68	881	1.2	19.2	20.4
15.	Uttar Pradesh	401	599	2.4	5.6	8.0
16.	West Bengal	288	540	2.6	12 0	14.6
	Total (Incl. others)	3,178	6,901	2.8	11.2	14.0

Source: Statistical Outline of India, 1970. Tata Economic Consultancy Services, P. 106.

14% of the eligible couples have been protected by sterilization and loops. It is estimated that another 2.7% adopt conventional methods. But progress here is uneven. The loop touched its peak in 1966-67 at 9.2 lakhs and subsequently a steady reduction — 6.7 lakhs in 1967-68 and 4.7 lakhs in 1968-69. There was 119.2 per cent achievement in sterilization in 1967-68, but it also came down to 62.0 per cent last year. The combined achievement including conventional contraceptive users, was 61.8 per cent of the targets.

Various studies have shown that 95% of the people in India are aware of the concept of planned parenthood and small family norms. But so far only 16.7% in the reproductive age group have adopted family

planning. The main problem is to carry the message of family welfare planning to the rural areas, motivating the masses and persuading them to use some device regularly. The complexities and barriers to effective action are a result of poverty, a high degree of illiteracy and sheer size of the population.

The arguments for and against use of contraceptives, though hardly germaine to our situation in the country, may be briefly summarised. It is argued that the use of contraceptive is unnatural, because in contrast with the unimpeded course of nature it involves an element of human "interference" and regulation. It hinders the course of nature or the normal processes of intercourse and therefore is wilful non-co-operation with the Creator. True, contraception is unnatural. But, most of the means of the good life among civilized mankind are unnatural, for instance, eye-glasses, false teeth, ear-phones, house clothes and thousands of other things. The use of medicine and consequent prolongation of the longevity of life of man is also unnatural. In fact the progress of civilization has been from the natural to the artificial, a substitution of man-made for nature's methods 21. Secondly the opponents come out with the plea that birth-control by contraception is anticipatory murder. It involves the destruction of certain cells ejected from the body, but does not allow life to begin. The answer is that contraceptives involve destruction of sperms, but not of human life. for a new life begins only with conception in the union of sperm and ovum. Moreover in every act of coitus, millions of sperms are wasted, whether or not contraceptive is practised. Thirdly they say that birth-control degrades the marriage relationship. It changes love to lust, enthrones the carnal in place of the spiritual, and makes marriage a mere legalised prostitution. It weakens self-control, loosens passion and leads to bestiality 22. Moreover, it contains

element of embarrassment, calculation and artificiality, which must rob coition of its natural spontaneity and completeness 23. In reply, it has been pointed out that for indulgence of uncontrolled and unrestricted passion, it substitutes a thoughtful regard for the health of mother and children and the welfare of the whole family and permits that intimate communion of husband and wife so productive of tenderness 24. Lastly it is argued that contraceptives corrupt young boys and girls. The knowledge of contraception removes the fear of consequences of sexual intercourse and thus encourages pre-marital and extra-marital sexual relations. But then, any new scientific device carries with it dangers of abuse. But it is no adequate reason to reject science as immoral.

Motivation

While the authorities take comfort in the overall figures of the acceptors registering an increase, sceptics feel that the decline is due to the fact that like every other government programme, those already motivated due to their education and consciousness had been "mopped" up in the initial stages and the motivation programme for the rest lagged behind. As 42% of the country's total population consists of children under 15 years of age, there are waves of newcomers in the reproductive span. To catch them young, population education is to be made part of the school and college curriculum to help them to understand the need to develop a sense of urgency in solving the problem of population explosion.

Similarly there is a pressing need for far more research in the socio-cultural aspects of family planning. There is manifestly a great deal more to population planning than merely birth control. Attitudes, motivation, preferences, differ from region to region and from religious group to religious group and this essential research can best be conducted locally 25.

Programmes of family planning are beginning to show progress, but so far no appreciable reduction in the birth rate has been achieved. This means that family welfare planning programmes have to be undertaken on a humane but massive scale. There is no point in despair. There is every point simply in getting on with the job.

Conclusion

This control of population growth cannot be dealt with only as a problem of economic science and statistics. There are vital, moral and social aspects of sex, marriage and family which are to be considered. Responsibility is laid on thoughtful people to approach the programmes of limitation of family size, keeping in mind demographic considerations as well as the welfare of the individual family, which is the basic cell of society.

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